

# Alaskan Naval Base Would Be Key to Pacific Coast

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**T**HE preparedness program of the present Congress should include large appropriations for the defense of Alaska. As a naval base this territory is a key to the northern Pacific. As far as fuel for our battleships is concerned, it is the key to the Pacific coast, as well as to Hawaii and the Philippines. Indeed, its coal and oil resources may some day decide whether we are to have victory or defeat in a war with Japan.

Practically the only good steaming coal in our Pacific coast territories lies here in Alaska. The Asiatic fleet of the future will need in the neighborhood of a half million tons per annum, and the coaling stations of the Hawaiian Islands and of the Philippines will be supplied from here. It is of enormous importance that the harbors nearest which the coal lies be amply protected and defenses should be at once instituted for all the approaches to Resurrection bay, the terminus of Uncle Sam's railroad. That road leads to the Matanuska coal fields and the branch line opening them will be completed this year. The coal will come from those fields to Seward, and it will also go down to Anchorage, which is perhaps a hundred miles nearer the coal beds. The latter port will have to be protected from Cook inlet, that wide and deep bay into which ships can now sail to within seventy-five miles of our best naval coal supplies.

Another important harbor is that of Cordova, where this letter is written. It is within a short distance of the Bering river coal fields, which have great beds of bituminous and anthracite, and also within easy reach of the Katalla oil fields, the petroleum of which is said to be as good as that of Pennsylvania and eminently fit for the making of gasoline. Indeed, they are making gasoline there now and shipping it to Cordova for sale. Cordova is also within 200 miles by an excellent railroad of the best copper mines of the whole world. These are the famous Kennicott properties, which are now producing for the United States worth of copper a year at a cost of less than 5 cents a pound. Copper is one of the great necessities of modern warfare and any nation that has hold of the Cordova harbor can control all the copper it would need in any war of the future. Moreover, by building a railroad only thirty-eight miles long Cordova could have access to some of the best coal on the hemisphere and also to the Katalla oil fields, which

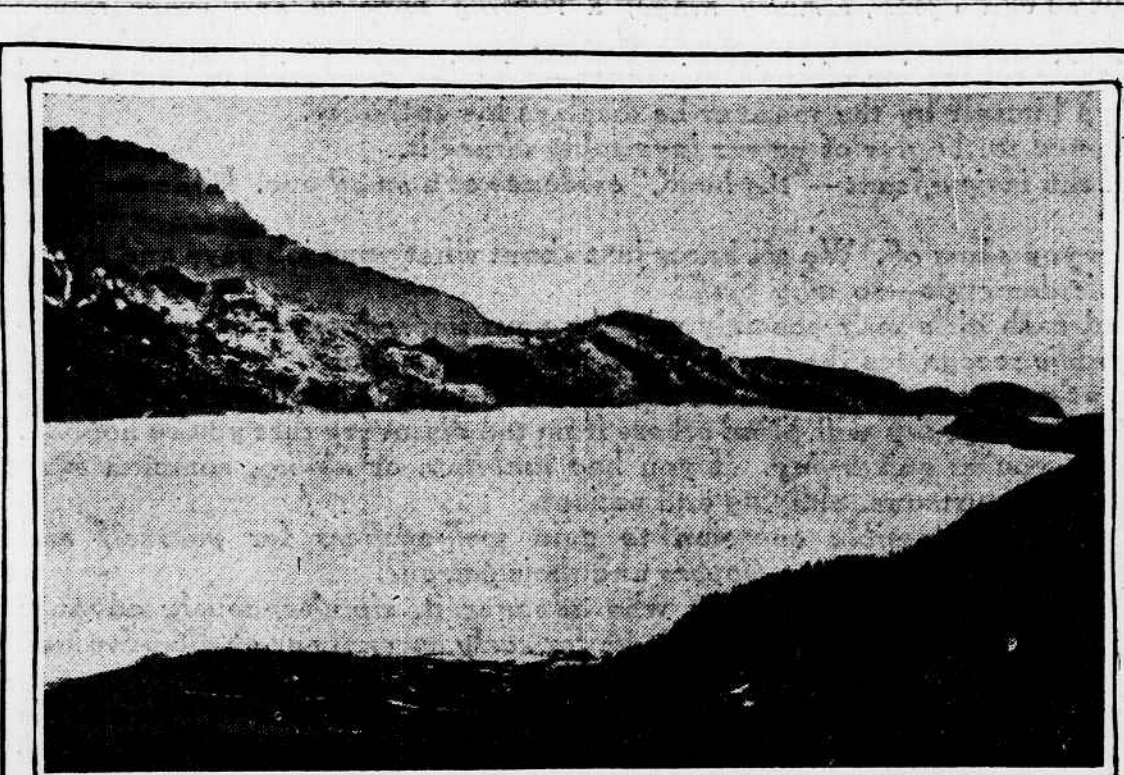
would supply it with gasoline, now the life-blood of modern warfare. This port, by the fast warships of today, is within less than three days of our Puget sound cities. The shortest distance is only about 1,200 miles; and Japan, for instance, has three dreadnaughts of over 27,000 tons each which could make that journey in less than two days. These ships are the Kiri-kiri, which are built at the shipyard of which has 68,000 horsepower and can make twenty-seven knots per hour. Japan is ten or twelve days from Cordova, and the advantage of any of the Asiatic nations having a naval base in Alaska can be easily seen.

I have referred to Japan because she is the only oriental nation that needs to take account of this territory. It is written that she should be considered I find plenty of evidence. Everywhere I go I hear stories of how the Japanese are spying Alaska. Like the two men whom Joshua, the son of Nun, sent out from Shittim to Jericho, they seem to be going out secretly and using all sorts of methods to learn the lay of the land. One difference is they are not going to Jericho, but to the Bering river, and there about the mines. They are working, and, as far as possible, their tracks are kept covered. I am told that the Japanese are now employed in all the fishing stations along the coast. I saw a large number at Ketchikan and in other parts of southeastern Alaska. They are to be found at all the salmon canneries, and here and there about the mines. They were employed in the Bering river coal fields before the government closed them, and they have worked in all capacities in the mines at Kennicott and about Cordova. They have also been employed in the oil fields of Katalla, and I doubt not they have full information as to the other oil and coal deposits of the territory.

One of the last Japanese stories I heard relates to a Seattle man who was operating in the Bering coal fields before they were closed by the government. This man had a cook from Japan, whom he called Henry, and whom he boasted was the best cook in Alaska. He was always talking of Henry's capabilities. He said he could not only cook, but could make excellent sketches, and that he was able to read and write in all sorts of notes. He was so reliable and trustworthy that his employer sent him on all kinds of missions and gave him the care of his papers.

As time passed on the man, seeing the fate of his cook, began to feel uneasy. He was a Seattle man, and he was in the wholesale fish business. He had sent him to Cordova, and he had recommended him to the best of his knowledge. Then the Japanese-Russian war broke

**PREPAREDNESS Program and the Territory—How Coal and Oil Resources Should Be Protected From the Navies of the Pacific—Dangers That Might Arise—Defenses Needed for Resurrection Bay and Cordova—Petroleum Beds of the Pacific Coast—Where and What They Are—An Oil Lake in the Alaskan Range and a Petroleum Mound on the Shores of the Arctic.**



RESURRECTION BAY, WHERE THE NAVY HAS RESERVED 3,200 ACRES FOR A BASE. THE SITE IS BEHIND THE HILLS AT THE RIGHT.

He called and when he appeared in the office he was Henry. He was such a good cook that he had risen to be one of the confidential agents of the Japanese government, and in the war department at Tokyo I doubt not there are maps and plans of the Bering river coal fields which Henry had made.

Another instance was given me by one of the scientific experts of the United States government, who had received an assignment to go from Juneau to Seward late one September not long ago. The cold weather had already set in at the west, and the man dreaded the trip. He did not expect to have fellow passengers, but he was going to the Bering river, and he was to be in charge of a Japanese naval attaché who had been stationed in Washington. Commander Hogenawa, although that is not his real name.

The scientist asked the lieutenant commander where he was going and was told that he was making a round trip to Seldovia, the farthest point to which steamers go in the winter. It is a fishing station at the southwestern end of the Kenai peninsula, and the ships going there visit Cordova and Seward and all the other important points along the coast.

Before the steamer left Juneau the governor of the territory came down to the wharf and was introduced to the lieutenant commander. He asked him where he was going, and upon his replying that he was bound for Seldovia, wanted to know if he had yet secured a license. The Japanese was dumfounded. He replied that he did not know a license was required by a foreigner to travel on American vessels going to Alaska, and seemed greatly surprised when the governor explained that he meant a license to hunt for big game, which was the only reason he could possibly think that any one would

care to visit Seldovia at that time of the year. The Japanese replied that he was making the trip merely for the sea voyage and for pleasure.

My scientific friend became fairly well acquainted with the Japanese during the voyage, but not well enough to ask personal questions. The Japanese did not volunteer anything further as to his business, but the scientist says that he had a camera with him and made numerous photographs everywhere. He took snapshots of every bay and channel, and kept a notebook, in which he jotted down voluminous memoranda in Japanese characters. His notebook was evidently precious, for it was fastened to a steel chain, riveted to a leather belt, buckled about his waist. The lieutenant commander had the latest charts of our geologic survey with him, and he made notes upon them as he went. He was probably getting full information about the coast in case it might be needed by his navy at any time in the future.

By the recent developments on the battlefields of Europe the oil fields of Alaska have become of enormous importance. Gasoline is an absolute necessity for motor car transportation, and is employed not only for the transportation of men, but also of ammunition, food and other supplies to the battlefields. The advantages of supply points of this fuel in the northern Pacific cannot be overestimated, and the oil fields of Alaska may become of great moment in the international complications of the future. It is not generally known that petroleum has been discovered in many

parts of Alaska. In a paper given last year before the American Institute of Mining Engineers, the late Professor Fred H. Brooks, who is at the head of the geological survey of Alaska, described the oil fields of Alaska, and pointed out where petroleum is seeping forth from the earth. There are probably other deposits to be going out secretly and using all sorts of methods to learn the lay of the land. One difference is they are not going to Jericho, but to the Bering river, and there about the mines. They are working, and, as far as possible, their tracks are kept covered. I am told that the Japanese are now employed in all the fishing stations along the coast. I saw a large number at Ketchikan and in other parts of southeastern Alaska. They are to be found at all the salmon canneries, and here and there about the mines. They were employed in the Bering river coal fields before the government closed them, and they have worked in all capacities in the mines at Kennicott and about Cordova. They have also been employed in the oil fields of Katalla, and I doubt not they have full information as to the other oil and coal deposits of the territory.

I traveled the other day with a man who had been exploring in the Alaska range prior to the time when the coal beds were withdrawn from entry by the government. He had photographs of coal veins of enormous thickness. He claims that the coal is of a high grade, and says that there is a lake of petroleum sixty feet long and eighteen feet deep not far from the coast. He says the oil oozes out around the shores of the lake, and that he has taken some of it to the refineries at Cleveland, where it was assayed as equal to the oil of Pennsylvania. According to his story he had spent \$4,000 or \$5,000 in investigating these regions when the Pinchot-Balinger excitement occurred, and he gave up all hope of doing anything with them. He says that the geological experts have passed within a few miles of the deposits, but so far no one but himself knows just where they are.

As to the oil along the Pacific coast, the Katalla fields are perhaps the best known. They lie on Controller bay just below the Bering river coal fields, and between that coal field and the sea. They are almost directly north of Kayak Island. They cover a belt thirty-five miles long and from four to eight miles in width as now defined by the seepages and springs of natural gas. They were beginning to drill there before the government locked up the oil fields, and several claims had already been taken out. These claims the government could not control, and some

work is now being done upon them. In all twenty-six different holes have been drilled and in ten of these more or less oil has been struck. Some of the wells have been producing from ten to twelve barrels per day, but the deepest well has been put down only sixteen hundred feet and none has gone deep enough to actually test the field. A little further south along the coast is another oil region. This is known as the Yakutatka field. It lies just beyond the Bering glacier, and extends to the south of the Bering river. It is perhaps twenty miles. The field is marked out by the oil seeping out of the ground. The Bering river is from a half mile to two miles from the ocean shore. The oil goes on to an unexpected and is covered by a thin layer of ice. Some is found oozing out of the ground near the Yakutatka and a number of seepages are reported all the way from Yakutatka to Yakutat bay, a distance of several hundred miles.

This Yakutatka oil comes out for the most part in a series of about valleys. Most of the seepages are small, but there is one on Johnston creek that is roughly estimated to discharge a barrel or more of oil a day. No drilling has been done in this field, and the district is almost inaccessible from the ocean, as the landings are exposed to the full sweep of the Pacific. The chief trouble as to building a railroad or pipe line is the Bering glacier, which lies between Yakutatka and the Bering river coal fields. That glacier is said to be receding and in time the field will probably be accessible.

There is another oil field only a short distance from Seward, on the west shore of Cook inlet. The steamers to Anchorage pass near it. It is almost under the shadow of Mount Hiamma and not far from Hiamma lake, one of the most beautiful bodies of fresh water in Alaska. This is the Iniskin oil field, so called because it lies on the shore of Iniskin bay, which is a part of the western coast of the Iniskin strait.

The oil here is supposed to lie in a stratum of sandstone. No drilling has been done there since 1904, and before that the field was only partially worked. One well was sunk to a depth of a thousand feet. It was producing gas and oil when the water rushed in and shut off the oil. The field is said to be abandoned at a depth of 150 feet and a third struck oil and gas at 170 feet.

The fourth oil field on the Pacific coast is on the Alaska peninsula, that great, heavily wooded mountain range which forms the southwesternmost point of the territory, ending in the Aleutian Islands. The oil has been found near Cold bay, a distance of about 200 miles from the

Kenai peninsula, and just across the bay from the island of Kodiak. There are a number of oil seepages in that field, and they have been drilled there before the conservation scheme stopped further exploration. The seepages are strong and the conservation scheme stops flows out of the ground. There is a good harbor at Cold bay, which is open throughout the year. This oil field is the nearest Japan of those so far discovered.

The fact that petroleum exists in Alaska is not new. The Cold bay field was known to the Russians as far back as 1855, but no attempt was made to investigate it; and thirteen years after we took possession of the territory oil was reported along the Pacific coast. It is now about twenty years since attention was drawn to the Katalla and Yakutatka fields, and the first drilling at Yakutatka was in 1901. A little later a survey was made for a pipe line from Controller bay to the field.

The first drillings in the Iniskin field were at about the same time, and it was two years later that the wells were sunk in Cold bay. The work of investigation was going on when the California oil fields greatly increased their output. This took the life out of the Alaska oil boom, and before it could be revived the conservation craze occurred and in 1906 all the petroleum lands of the territory were withdrawn from entry.

Among the most interesting of oil discoveries is the one near the Arctic ocean. It is in the shape of a mound of solidified oil which rises high above the country about in the northernmost part of our territory. It is so near to the north pole that Smith bay, the harbor hard by, is locked in ice for at least ten months of the year, and for this reason the field will not be commercially profitable. The mound is the residue of a petroleum fountain or spring. It is several hundred yards in diameter and it rises to a height of 150 feet above the level of the tundra. It appears to be composed of petroleum containing an asphaltic base, in which are mixed vegetable matter and silt.

The discovery of these several oil fields at such wide distances apart, shows how little we know of Alaska. The oil mound at Smith bay is almost a thousand miles directly north of the point on the Alaska peninsula where the petroleum is oozing out at Cold bay. The oil seepages along the Pacific coast extend at wide intervals apart, over a distance, east and west, almost as great as that between New York and Chicago. Only about one-fifth of Alaska has been carefully investigated by our geologists, and there are probably other deposits of petroleum in the wilds of the unexplored regions.

FRANK G. CARPENTER.



LOADING COPPER ORE AT CORDOVA. THESE WHARVES ARE NOW UNDEFENDED.



LAYING RAILS AT ANCHORAGE. FORTIFICATIONS WILL BE NEEDED AT THIS PLACE.

## Establishing the Dyestuff Industry on a Paying Basis in This Country

**D**R. WALTER F. RITTMAN, the government chemist, has literally stepped into the breach to effect the country's salvation in regard to the establishment of a domestic dyestuff industry.

Dr. Rittman's process is of inestimable value to the nation, since it has made it possible for the United States to make at once all of the high explosives she wants without having to depend upon other nations for the raw materials. The process, which is the first to obtain benzol and toluol from crude oil, just as it comes from the earth, instead of from coal, is a distillation process, by high temperature and high pressure, and instead of just breaking or cracking the molecules in the liquid oil, it breaks them up when they reach the vapor stage and thereby more action is obtained, for more of the molecules are thus broken up or cracked, as the chemists term it, than in the old method.

The same process is used for obtaining gasoline and benzol and toluol, but in getting the gasoline none of either of the other two ingredients are found with it. When the process is set for benzol and toluol a little gasoline is obtained with them.

These basic chemicals may thus be provided in abundance to meet the demands of both the explosive and the dyestuff industries, which have been crippled through the withdrawal of the German chemicals. Had the United States become involved in war and the German embargo upon these raw materials continued this country would have been compelled to go back to the type of explosive used during the civil war. Moreover, had not Dr. Rittman evolved this process, the women of the land would shortly be forced to forego gay colors and dress in black and white.

It has not yet been determined whether the benzol and toluol obtained from crude oil will be cheaper than the same products obtained from the coal, but the bureau of mines is able to conduct either process and the United States has all of the raw materials for all its needs.

Never before in the history of man did chemicals play so large a part in the scheme of the world's war as now. Previous age were so many industries and so many commercial commodities dependent upon chemicals for their operations. This may be realized when it is remembered that all of the dyestuffs, the explosives, the high explosives, the fuel used in place of wood and coal, like drugs, have their basis, if not their entire composition, in chemicals. Since modern warfare has displaced the old hand-to-hand encounters and the chemist has taken the place of the warrior, vessels, guns and men are armor, without powder and the nation without chemical plants might as well disband its army and send its navy to the junk heap.

Of all the wonderful achievements of the United States, it has never taken its place in the manufacture of dyestuffs, depending almost wholly upon its importations from Germany. Germany, with her dyestuff factories, could supply American buyers of dyestuffs with all they needed cheaper than American competitors could produce them.

With the outbreak of the war, when Germany speedily turned her dye factories into munition factories, the United

States began to be restricted in the supplies of color chemicals that came from the Kaiser's domain, and at present the commercial embarrassment, due to the shortage of dyestuffs obtainable from any and all sources throughout the world, has assumed appalling proportions. One of the greatest problems agitating the public mind is that of effecting legislation to bring about the establishment and protection of American chemical plants and which the country at the close of the present war with dyes and dyed commodities at rates as low as possible, but Alaska in disgust and came to Seattle to engage in the wholesale fish business. He had sent him to Cordova, and he had recommended him to the best of his knowledge. Then the Japanese-Russian war broke

Of these enough are already started to give an abundant supply. What makes the prospects of the American dyestuff plants so promising is that this country has an abundant supply of all of the raw materials necessary for the production of all of the dyes needed.

Germany has been the dyestuff seller for thirty years and now that she is using the privilege of buying from the House of Representatives February 14, 1916, in making a plea for non-partisan action for the dye famine is not the exception, said, in part:

I know of no more humiliating fact connected with our national economic policy than that today the United States of America is compelled to humbly beg from the German government the privilege of buying from a chemical factory in Charlottenburg the dyestuffs needed to print our money and make our postage stamps, and that such consent is only granted on condition that the State Department shall permit us to purchase in its own name, for governmental use only, and guarantee that they shall not be used for commercial purposes.

"Having purchased and paid for them by the consent of a German king, this great nation of a hundred million people must then, forsooth, humbly beg from an English king the poorer privilege of having them transported in a neutral ship from a neutral port across an ocean which we had fondly believed to be free to every neutral power for non-commercial use."

This purchase amounts to \$75,000, and a part of it is now in Rotterdam. The bureau has now enough material to continue its work for two months. This is received by us, will permit an extension of work for nearly a year. A further supply is dependent upon the German government's permission to exchange liner oil with Germany in payment for it instead of cash. As I have stated, I wonder whether this nation, which is now a colony of a European monarch, and subject to orders in council and paper blockades, and our trade with the world absolutely controlled by our greatest commercial rivals, the color of the uniforms for our soldiers and sailors must soon be changed unless some relief from the existing dyestuff famine is speedily secured. If the war be long continued and the chemical plants on the Rhine should perchance be destroyed, who knows, but that this nation may ultimately be compelled to change the color of the national flag.

Regarding the enormous prices paid by American firms for dye materials from various sources, there is on record the testimony of witnesses before

**WHAT the Rittman Process Has Accomplished, and What It Promises for the Future. Government Chemist Steps to the Front When the United States Feels Shortage of Raw Materials From Germany—Protection for the Industry—Basic Chemicals of Dyestuffs and High Explosives—Why the Germans Held a Monopoly.**

the ways and means committee of the House of Representatives citing a number of definite instances when the price paid was many times in excess of previous charges. Dyes brought from the interior of China cost \$7.50 per pound, which ordinarily sold for 20 cents per pound. Others testified that in some cases the price had advanced from 2,000 to 4,000 per cent, and that even at any price it is impossible to secure many dyes.

Another witness stated that his firm paid more than \$300,000 in excess in 1915 for a consignment of dyes of some quantity than was paid the year before. So desperate is the need for dyes that old typewriter ribbons and carbon papers are being gathered from the paper warehouses in order that the dyes may be reclaimed. Also, the price of \$15 per pound. Recently it was reported that a single keg of aniline dye.



DR. W. F. RITTMAN, Who invented the process which obtains benzol, gasoline and toluol from crude oil.

ordinarily bringing the price of \$15, brought, at a London auction, \$1,500. Still another witness, who represented a firm of dyers and bleachers of straw braids for hats, declared that one particular dyestuff made in Germany, which, prior to the war, cost 30 cents per pound, now cost his people \$6.75 per pound, in addition to certain freight charges. Also, the particular purchase in normal times would have cost \$1,748, but through the increased rates cost \$12,666. This same witness further stated that if his firm were to receive orders to reproduce the colors of the American flag they would have to use dyestuffs that have a G-r-

man mother and a Chinese stepfather and pay dearly for the privilege. The greatest measure of hardship created by the dye famine is not the exorbitant prices asked for such meager supplies, nor does it lie in the fact that many of the daily articles of comfort and necessity are being made of artificial colors.

Also, because of dependence upon one nation for the supply of dyestuffs, the total loss, direct and indirect, now being borne by American users of dyestuffs and dyed goods amounts to the enormous sum of \$400,000,000, which, by the way, is more than the Spanish-American war cost. This means even greater loss throughout all sections of the country, if the present conditions continue, since fully 70 per cent of the cotton goes through the dye plant before it is put upon the market.

Practically the same is true of the woollens, except that it costs five times as much to color them as it does cotton. Besides these dyestuffs are required for leather, paper, books, ink, paint, fur, feathers, silk, velvets, straw, shoe leathers and many other articles. Though the nearly world-wide monopoly of the dyestuff industry was of immense commercial value to Germany, it was not simply to sell to neighbors the gay and somber tints for their cloths that she fostered for so many years her long string of twenty-two dye plants along the Rhine. There were far more important services for the great laboratories to perform, and for that reason Germany had built up over the world a monopoly of the dyestuffs that has exterminated all other competitors.

The German government put its power and money back of the factories because the simple coal tar derivatives which form the basis of most of the dyestuffs also are necessary to the production of explosives. When any nation becomes able to make its own dyestuffs it is also able to furnish itself with the most important of all the agencies of modern warfare; hence the manufacture of high explosives in war time is inseparable from the production of the coal tar dye industry in time of peace, the essential ingredients for both being benzol and toluol.

When Germany placed an embargo on these raw products—benzol and toluol—that they might be obtained by England and used in the manufacture of explosives, the chemical plants of the United States were left high and dry, with no other market of any consequence from which they could procure the raw materials.

Then American ingenuity, which had been apasmodically lumbering over the dye problem, despite the watchfulness of the German producers, waked into activity, and the government chemists announced that there was no great undertaking involved in the making of dyes, nor in the getting of the raw material, since this country had an abundance for all her needs and more besides. She had also the necessary technical knowledge and the chemical talent, and her chemists knew the German process for obtaining benzol, etc., from coal.

Dr. Charles L. Parsons, chief chemist of the United States bureau of mines,



GENERAL VIEW OF PLANT OF A CHEMICAL COMPANY.

explaining the means of obtaining the necessary chemicals, said: "The bureau of mines has long been interested in the development of a by-product coke industry, in view of the tremendous amount of wastes of valuable material that has taken place yearly. This waste of material, which is available to the farmers of the country for agricultural purposes, to the manufacturers for power and to the whole nation as a source of products which might be used in time of war for explosives, has been a source of regret to the dyestuff industry, was pointed out by the bureau in 1913.

The figures then given for the year 1910 showed that 63,000,000 tons of coal containing \$22,000,000 worth of recoverable nitrogen were converted into coke, but only about one-sixth of this coal was treated in by-product coke ovens or retorts which could make the recovery of the nitrogen possible. Had this been done in by-product ovens the value of the recoverable contents of the coal made into coke in the beehive ovens would have been between \$35,000,000 and \$40,000,000.

"It is through the use of the by-product ovens that Germany has obtained the basis of both high explosives industry and a dyestuff industry. Through by-product ovens are recovered large quantities of ammonium compounds, which are used in times of peace for agricultural purposes and in time of war they are oxidized into nitric acid, the basic and absolutely essential chemical for the production of all of the chief explosives used in warfare.

"It is chiefly from ammonia obtained from by-product coke that Germany is now procuring her nitrogen compounds by the oxidation of ammonia. Furthermore, the by-product coke industry yields large quantities of coal, which furnishes benzol and toluol, used for the basis of most dyestuffs and the basis for the high explosives used in shells, cordites, etc., as well as the naphthalene, anthracene and most of the other compounds going into the dyestuff industry."

The difference between the progress made by Germany and the United States in these two industries that are so closely allied that Germany treats about five-sixths of her coke in by-product ovens, so as to obtain every bit of chemical of value, while the United States has treated only about one-sixth of her coke in this manner, and this is just about the difference which all the resources of the two countries have been developed in these two lines, according to Dr. Parsons.

"Since 1910," continued Dr. Parsons, "the bureau of mines has been working on the by-product coke industry, and since the war began great impetus has been given to this industry. In 1915, seventy-four by-product coke ovens in operation and over one-third of the coke produced in this manner, giving in five years an increase of about 100 per cent. Ammonium sulphate, benzol, toluol, and other by-products have been turned out in increasing quantities. Essentially the same basis chemicals, such as sulphuric acid, nitric acid, chlorine, bromine, acetone and many others, are required in both industries.

"The great difficulty which the munition plants of the country have had to meet during the past year in order to supply the demands made upon them has been the procuring of sufficient sulphur and nitric acid to carry on their work. It is at present more difficult to obtain these two acids than to get benzol and toluol. But the heavy chemical industry has been greatly helped by the fact that at least one million tons more of sulphur have been made since the war in 1915 than in the previous year.

The production of nitric acid has also increased far beyond the most sanguine expectations. The basis of nitric acid in this country is now solely the sodium nitrate, known as the Chilean saltpeter, imported from Chile. The saltpeter is now from ammonium sulphate, which can now be commercially oxidized to nitric acid, and the ammonia produced by the by-product coke works would help to supply a large amount of this absolutely necessary chemical. Germany has become the supplier from Chile should become unavailable.

"Because of the explosive and the dyestuff industries require the same raw materials, the same chemicals and to a large extent the same apparatus for distillation and nitration, it is a simple matter to convert any dyestuff plant into a munition industry."

"The demand for colors has grown so desperate that the bureau of mines and several other branches of the government have given a great deal of effort to experiments along many lines to relieve the famine. The greatest attention has been given to the development of the Rittman process for the making of gasoline and toluol from heavy oils. This process follows entirely new lines, as petroleum products are used instead of coal tar products, and since the United States produces no petroleum products from Mexico, the prospects for the development of an extensive industry is most encouraging.

Because of the scarcity of dyes, the forest products laboratory of the United States has been working on a new dye, a yellow dye that bids fair to replace the dye from fustic wood which has been imported in large quantities from Mexico. This new dye comes from the immense amount of waste orange wood left from the manufacture of wagon wheels, insulator pins, fence posts and other articles.

"Because of the irregular form of the trees, there is a great deal of material wasted, pared away in the process of making up the wood, and it is these scraps that seem likely to replace the imported dye woods. The waste wood is estimated by the forest service to be about 100,000 cords a year, and is shipped from Texas and Oklahoma and delivered at northern Atlantic ports at from \$10 to \$14 a ton, while the foreign fustic costs from \$18 to \$20 a ton.

Between 20,000 and 25,000 tons of fustic are imported annually and a great deal of this is used in the manufacture of fully twice this amount of orange wood waste is available each year in the two states mentioned. Dyes from this wood have been through all of the necessary laboratory tests and have been found to be as good as the fustic dyes.

**No Outlook.** "We Americans believe in augmenting our output. We believe in forging ahead. We're not like Smithers, who says 'I ain't got no more to do.' One day in Loretto I saw Smithers whitewashing his pigeon with a white-wash brush with nearly all the bristles gone. "Smithers," I said, "why don't you get a brush with more bristles in it?" "Why should I do that?" Smithers asked. "Why," I said, "because, of course, if your brush had more bristles, you could do twice as much work." "Well," said Smithers, "I ain't got no more to do." "But," I said, "ain't you got twice as much work to do?"